**STATE OF CALIFORNIA**
**CALIFORIA REGIONAL WATER QUALTIY CONTROL BOARD**
**LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. CI-8724**
**FOR**
**INTERNATIONAL RISK ASSESSMENT DOWNEY LLC**
**FORMER NASA INDUSTRIAL PLANT**

**FILE NO. 97-197**

International Risk Assumption Downey LLC (hereafter "Discharger") shall implement this Monitoring and Reporting Program (MRP) on the effective date (June 3, 2010) of Regional Board Order No. R04-2010-xxxx. The Discharger shall not implement any changes to this MRP unless approved by the Executive Officer.

## I. GROUNDWATER MONITORING PROGRAM

It is anticipated that the pilot test will be initiated in the second quarter of 2010. The following groundwater wells and amendment points will be included in the sampling program:

Group A: AI-1002,-1010, 1016
Group B: PERF-1005
Group C: MW-29
Group D: PERF-601,-901,-902

Figure 1 shows the location of the Site. Groundwater well and amendment point locations at the Site are shown in Figure 2. Group A sampling points are amendment points. The Group B points are monitoring wells within each treatment area. Group B wells consist of monitoring wells that are located in close proximity to solution distribution zones, and will be used to evaluate carbohydrate consumption and distribution. All Group A and B wells will be used for performance monitoring purposes. The Group C sampling point is a downgradient sample location, and Group D are upgradient sample points.

Baseline sampling will take place prior to injection. Upon completion of the injection of the carbohydrate solution, samples will be taken from Group A and Group B monitoring wells Figure 2 and will be analyzed for field parameters (oxidation-reduction potential, dissolved oxygen, pH, specific conductance, temperature, turbidity and groundwater elevation), chlorinated volatile organic compounds (VOCs), total organic carbon (TOC) and volatile fatty acids (VFAs) for process monitoring purposes and to provide post-injection baselines.

The required constituents to be analyzed and the monitoring schedule for each sample group for the 3-year pilot test are shown below.

| CONSTITUENT | UNITS | TYPE OF SAMPLE | MINIMUM FREQUENCY OF ANALYSIS |
|---|---|---|---|
| Total Daily Injections | Liters | Measurement | Per injection at each injection point |

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| | | | |
|---|---|---|---|
| Groundwater Elevation | Feet below ground surface (bgs) | In situ | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Dissolved Oxygen | mg/l | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Oxidation-Reduction Potential | Millivolts | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| PH | pH units | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Temperature | Degrees C | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Specific Conductance | µS/cm | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Turbidity | NTU | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Chlorinated Volatile Organic Compounds (EPA Method 8260B) | µg/l | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly |
| Total Organic Carbon (SM5310D) and Volatile Fatty Acids | mg/l | Grab | Group A: Baseline, post injection and quarterly<br>Group B: Baseline, post injection and quarterly<br>Group C: Baseline and semi-annually<br>Group D: Baseline and semi-annually |
| *Dehalococcoides* PCR | presence or absence | Grab | Group A: Baseline and semi-annually<br>Group B: Baseline and semi-annually<br>Group C: Baseline and semi-annually<br>Group D: Baseline and semi-annually |
| Dissolved Metals (Manganese, Iron and Arsenic) and Anions (sulfate, nitrate, nitrite and chloride) and Total Sulfides | mg/l | Grab | Group A: Baseline and semi-annually<br>Group B: Baseline and semi-annually<br>Group C: Baseline and semi-annually<br>Group D: Baseline and semi-annually |
| Dissolved Hydrocarbon Gases (ethane, ethane, and methane) | mg/l | Grab | Group A: Baseline and quarterly<br>Group B: Baseline and quarterly<br>Group C: Baseline and quarterly<br>Group D: Baseline and quarterly<br>Group A-D: Semi-annually after four quarters |

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All groundwater monitoring reports must include, at minimum, the following:

a. Well identification, date and time of sampling;
b. Sampler identification, and laboratory identification; and
c. Semi-annual observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

## II. AMENDMENT AND BACTERIA CULTURE INJECTION MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. Depth of injection points;

2. Quantities of amendment and selected bacteria culture injected and dates injected; and

3. Total amounts of amendment and selected bacteria culture injected in the reporting period.

## III. REPORTING REQUIREMENTS

The first monitoring report under this Program is due by 15 July 2010. This monitoring and reporting program (MRP) supercedes the MRP under the General WDR Order No. R4-2002-0030, Series 047, CI No. 8724.

The Discharger is required to submit a preliminary report including baseline and injection data, plus quarterly reports for the first 8 quarters. The groundwater monitoring wells and amendment points will be gauged and sampled, and results will be reported to the Regional Water Quality Control Board (Regional Board) under the MRP according to the following schedule:
Monitoring reports shall be received by the dates in the following schedule:

| Reporting Period | Report Due |
|---|---|
| January – March | April 15 |
| April – June | July 15 |
| July – September | October 15 |
| October – December | January 15 |

The Discharger shall submit Reports detailing the results of the remediation. The reports should include an evaluation of the effectiveness of using the amendment and SDC-9™ or KB-1™ solution to remediate VOC-contaminated groundwater at the Site, the impact of any by-products on the receiving groundwater quality, and any other effects the *in situ* treatment may have. The Discharger is required to submit the following reports pursuant to their respective due dates:

| Report | Due Dates |
|---|---|
| Preliminary Report | October 15, 2010 |
| Final Report | October 15, 2012 |

If there is no discharge or injection during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.

Whenever wastes associated with the discharge under this Order, are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.

## IV. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

> "I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.
>
> Executed on the _____day of _____ at _____.
>
> _____(Signature)
>
> _____(Title)"

## V. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by: _____ Date: _____
Tracy Egoscue, Executive Officer

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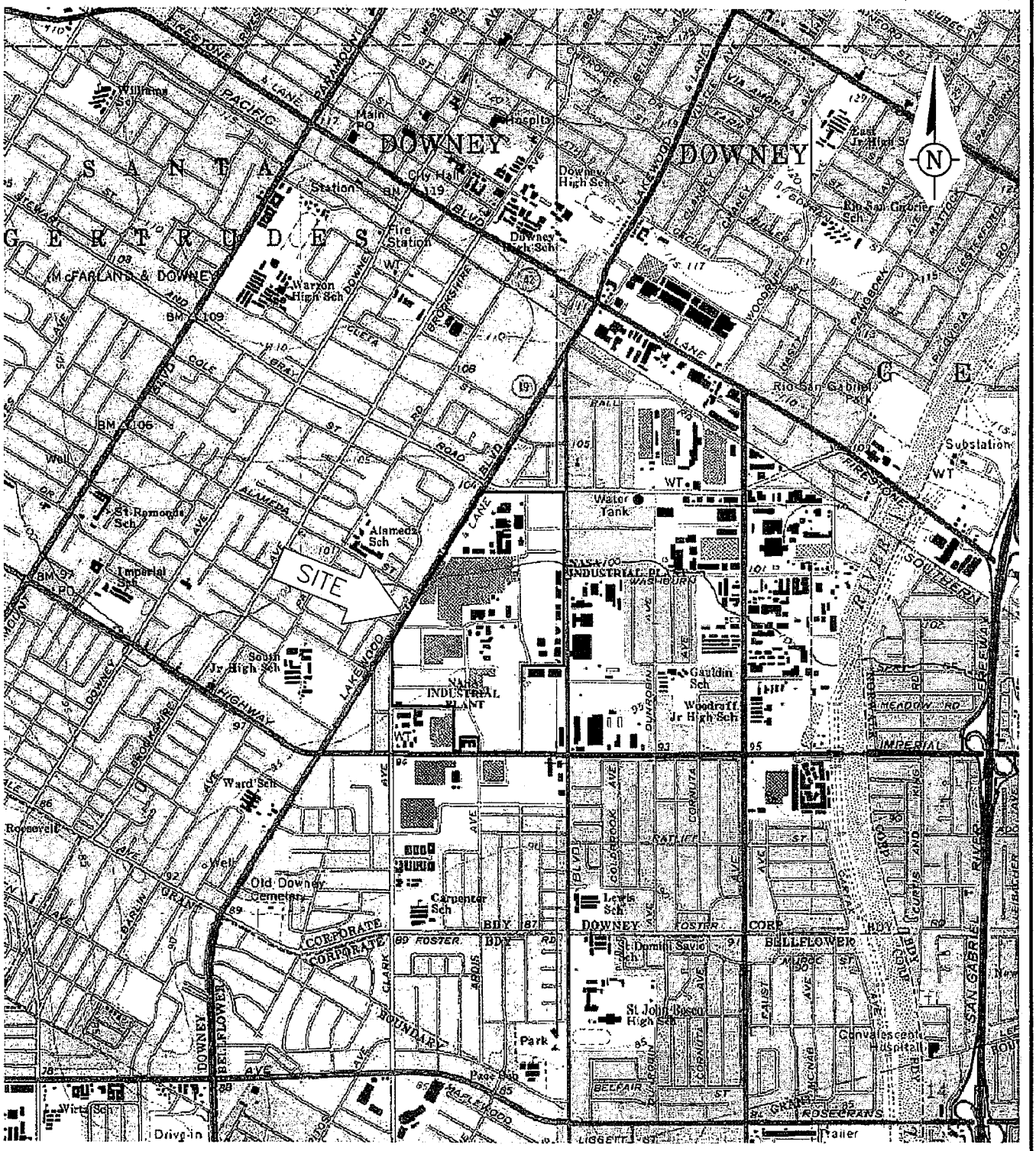


FORMER NASA INDUSTRIAL PLANT
DOWNEY, CALIFORNIA

**SITE LOCATION MAP**

ARCADIS

FIGURE
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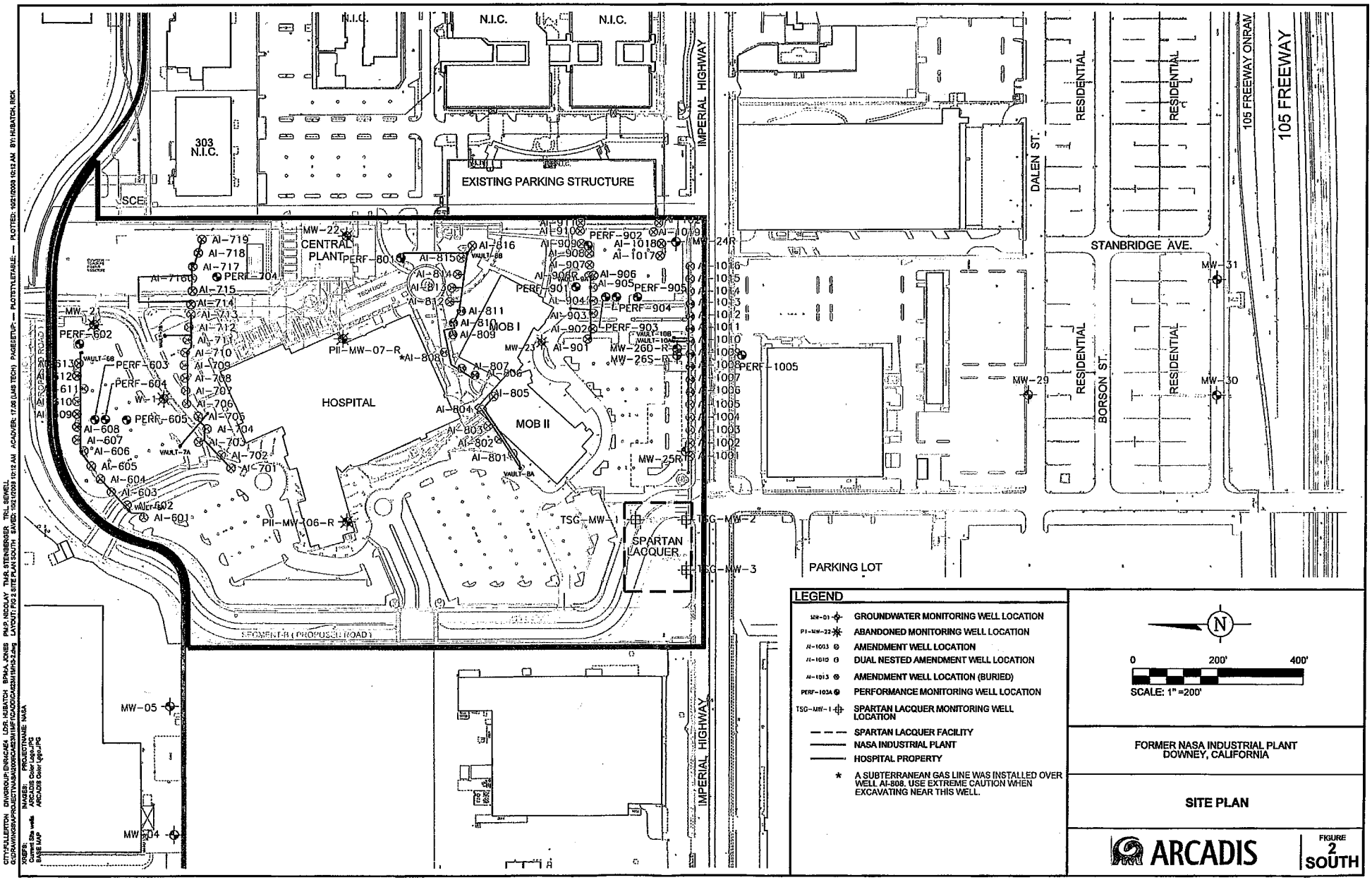
N.I.C.
N.I.C.
N.I.C.
303
N.I.C.
SCE
EXISTING PARKING STRUCTURE
IMPERIAL HIGHWAY
DALEN ST.
RESIDENTIAL
RESIDENTIAL
STANBRIDGE AVE.
105 FREEWAY ONRAMP
105 FREEWAY
CENTRAL PLANT
HOSPITAL
MOB I
MOB II
BORSON ST.
RESIDENTIAL
RESIDENTIAL
SPARTAN LACQUER
PARKING LOT
SEGMENT B (PROPOSED ROAD)
IMPERIAL HIGHWAY
MW-05
MW-04
LEGEND
GROUNDWATER MONITORING WELL LOCATION
ABANDONED MONITORING WELL LOCATION
AMENDMENT WELL LOCATION
DUAL NESTED AMENDMENT WELL LOCATION
AMENDMENT WELL LOCATION (BURIED)
PERFORMANCE MONITORING WELL LOCATION
SPARTAN LACQUER MONITORING WELL LOCATION
SPARTAN LACQUER FACILITY
NASA INDUSTRIAL PLANT
HOSPITAL PROPERTY
A SUBTERRANEAN GAS LINE WAS INSTALLED OVER WELL AI-808. USE EXTREME CAUTION WHEN EXCAVATING NEAR THIS WELL.
N
0
200'
400'
SCALE: 1" =200'
FORMER NASA INDUSTRIAL PLANT
DOWNEY, CALIFORNIA
SITE PLAN
ARCADIS
FIGURE
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SOUTH